



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,191	11/26/2003	Harry F. Schramm JR.	MFS-31944-1	2145
30698	7590	07/12/2005	EXAMINER	
NASA/MARSHALL SPACE FLIGHT CENTER LSO1/OFFICE OF CHIEF COUNSEL MSFC, AL 35812			LEE, SEUNG H	
		ART UNIT	PAPER NUMBER	
		2876		

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,191	SCHRAMM ET AL.	
	Examiner	Art Unit	
	Seung H. Lee	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 3/23/2004.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 1-19 are objected to because of the following informalities:

Re claim 1, line 15: Please substitute "it" with --said reflected beam--,

Re claim 10, line 19: Please substitute "it" with --said reflected beam--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "the first direction is forty five degrees relative to the impingement beam" in claim 4 is unclear. It is vague and indefinite to the examiner what the applicant is intending to describe of that the "first direction", that is, how the first direction (i.e., the impingement beam) proceeded to not contact the substrate which is a unused beam (109) as shown in figure 4 for example) can be forty five degrees relative to the impingement beam not ninety degrees as shown in figures. The Examiner respectfully request the applicant to point out where such limitation is disclosed in figure and specification.

Clarification and correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

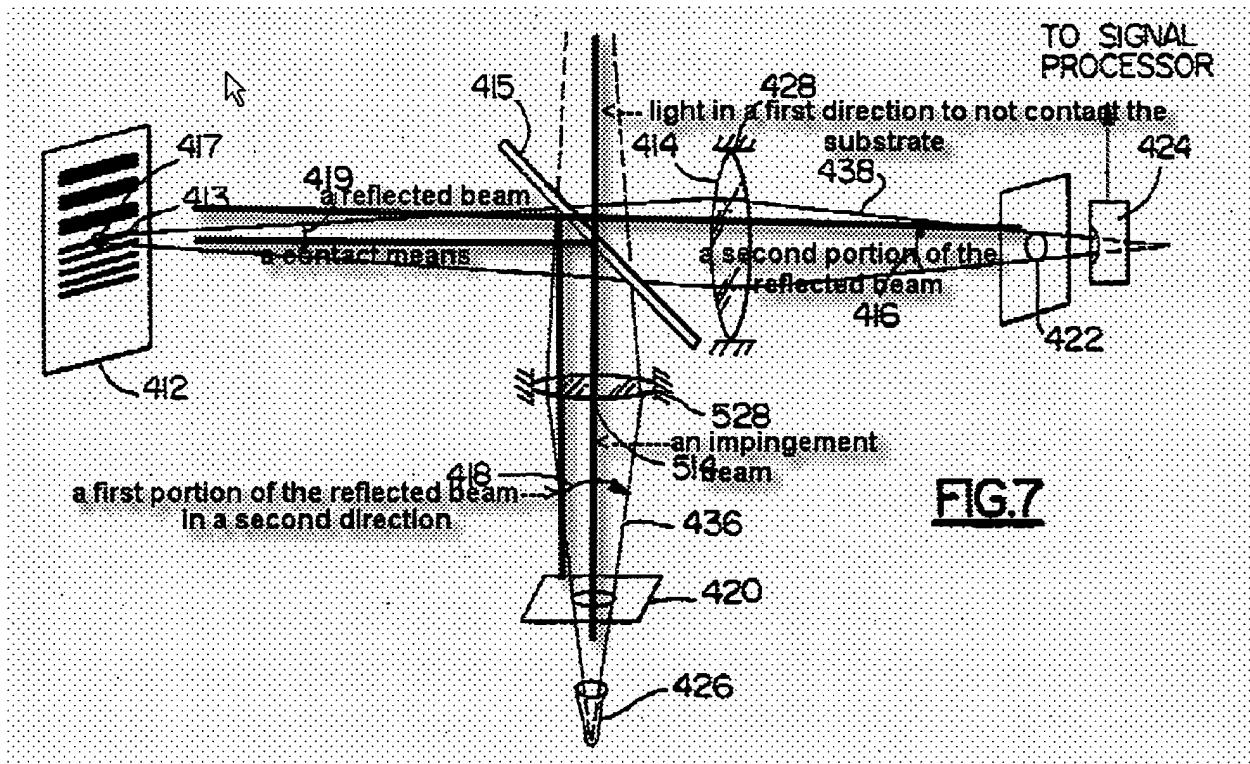
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 6-7, 10, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond, Jr. et al. (US 5,430,286)(hereinafter referred to as 'Hammond') in view of Wakimoto et el. (US 4,867,545)(hereinafter referred to as 'Wakimoto').

Re claims 1-3, 10, and 15-19: Hammond teaches that a barcode scanner comprises a light source (426) providing an impingement beam, a beam splitter (415) for receiving the light beam from the light source and splitting to allow some light from the impingement beam directing to the substrate (412) as contact beams while allowing some light to pass through the beam splitter in a first direction not to contact the substrate wherein such beam will be lost (i.e., function as a 50/50 mirror), a reflected beam proceeding 180 degrees relative to the contact beams from the substrate, the reflected beam proceeding into the beam splitter wherein a first portion of the reflected beam is directed in a second direction 180 degrees to the first direction and a second portion of the reflected beam passes through the beam splitter, a lens (414) positioned relative to the beam splitter to receive the second portion of the reflected beam, a sensor (424) located opposite of the lens from the beam splitter for receiving the

Art Unit: 2876

reflected beam after the reflected beam passes through the lens, the lens, beam splitter and substrate are collinear, the substrate is angled to a plane perpendicular to the contact beam about zero degrees as shown below (see figs. 1 and 7; col. 4, lines 30-col. 6, line 36).



However, Hammond fails to particularly teach or fairly suggest that the lens is telecentric lens.

Wakimoto teaches an image-forming optical system comprising a telecentric optical system having a first lens serving as a magnifier lens (figs. 1-3; col. 2, lines 10-15; col. 4, line 48- col. 6, line 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Wakimoto the teachings of Hammond in order to provide an improved optical scanner using the telecentric optical system in which enable the correction of a magnification of the images.

Although, Hammond as modified by Wakimoto fail to particularly teach that the impingement beam, beam splitter and substrate are collinear, it would have been an obvious design variation well within the ordinary skill in the art failing to provide any unexpected results for relocating the parts of the scanner of the Hammond/Wakimoto for arranging the impingement beam, beam splitter and substrate in a collinear pattern, choosing the location of the telecentric lens for scanning/reading the barcode from the substrate. Moreover, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233, that is, the optimum range of the telecentric lens of the optical scanner are 3-4 inches to 15 inches or up to 20 feet.

Re claims 6 and 7: the light source can be LED (col.4, lines 30-54) and the lens (525) serving as a beam combiner,

6. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond as modified by Wakimoto as applied to claim1 above, and further in view of Marom et al. (US 5,315,095)(hereinafter referred to as 'Marom').

The teachings of Hammond/Wakimoto have been discussed above.

Although, Hammond/Wakimoto teach the optical scanning system having a telecentric lens, they fails to particularly teach that the light source is infrared wavelength and provides collimated light.

However, Marom teaches the scanner can be implemented a infrared wavelength and a lens (22) for collimated the light (see fig. 9; col. 9, lines 37-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Marom the teachings of Hammond/Wakimoto in order to provide alternative system for illuminating the substrate using the infrared wavelength, in fact, using the LEDs, infrared wavelength are well known in the art at the time the invention was made as the light source for illuminating substrate purposes. Moreover, such modification (e.g., providing collimated light) would provide an efficiency system for illuminating the substrate by maintaining density of the light for projecting light for illuminating the substrate in distance.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond as modified by Wakimoto as applied to claim1 above, and further in view of Funk et al. (US 6,269,169)(hereinafter referred to as 'Funk').

The teachings of Hammond/Wakimoto have been discussed above.

Although, Hammond/Wakimoto teach the optical scanning system having a telecentric lens, they fails to particularly teach that the light source comprises a fiber light pipe.

However, Funk teaches a reader (10) for reading document comprising a fiber optic cable to emulate a point of light source (see fig. 1; col. 6, lines 28-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Funk the teachings of Hammond/Wakimoto in order to provide improved illumination means using the fiber pipe for directing the impingement beam wherein the fiber pipe is well known in the art for preventing loss of light, that is, the end of the fiber pipe has same brightness as the point where the light source locates.

8. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond as modified by Wakimoto as applied to claim 10 above, and further in view of Gurevich et al. (US 5,969,323)(hereinafter referred to as 'Gurevich') and Yoo et al. (US 6,765,857)(hereinafter referred to as 'Yoo').

The teachings of Hammond/Wakimoto have been discussed above.

Although, Hammond/Wakimoto teach the optical scanning system having a telecentric lens, they fail to particularly teach that the reader comprises a second light source.

However, Gurevich teaches that an optical reader for reading indicia comprises first light source (15) and a second light source (16) for illuminating the indicia (7) wherein the light source is an infrared, green/yellow light omitting diode, and/or, light emitting diode (see fig. 3; col. 2, lines 34- col. 4, line 22; col. 5, lines 8-45; col. 7, lines 24-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Gurevich to the teachings of Hammond/Wakimoto in order to provide an improved system by operating the reader in two operating ranges (e.g., short range and long range).

Although, Hammond/Wakimoto as modified by Yoo fails to particularly teach or fairly suggest that the reader comprises a second beam splitter.

However, Yoo teaches to use a first beam splitter (330) and a second beam splitter (331) for directing the light to the target (8 or 90) (see fig. 10; col. 8, line 45- col. 9, line 39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Yoo to the teachings of Hammond/Wakimoto/Gurevich in order to transmit the light beam in proper wavelength only using the beam splitter. Moreover, it has been held that mere duplication of the essential working structures of a device (i.e., the beam splitters and the light sources are arranged in duplicated matter) involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Additional Remarks

9. The lack of an art rejection with this Office action is not an indication of allowable subject matter (i.e., even though the claim 4 is rewritten or amended to overcome the Claim Objections as discussed above). The disclosure/claimed language is such that it is impractical to conduct a reasonable search of the prior art by the Examiner.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bremer (US 6,689,998) discloses an automatic distancing, focusing, and optical imaging system for optical imaging of an object.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung H. Lee whose telephone number is (571) 272-2401. The examiner can normally be reached on Monday-Friday, 7:30 AM- 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seung H Lee
Art Unit 2876
July 11, 2005